

## APPENDIX U

# SOLAR-READY PROVISIONS—DETACHED ONE- AND TWO-FAMILY DWELLINGS, MULTIPLE SINGLE-FAMILY DWELLINGS (TOWNHOUSES)

*APPENDIX U will go into effect upon approval by the Washington State Building Code Council.*

*((The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.))*

### SECTION U101 SCOPE

**U101.1 General.** ~~((These provisions shall be applicable for new construction where solar-ready provisions are required.))~~

New one- and two-family dwellings shall be provided with a solar-ready zone of not less than 300 square feet. Townhouses shall be provided with a solar-ready zone of not less than 150 square feet for each dwelling unit.

**Exception:** The following do not require solar-ready zones:

1. One- and two-family dwellings with less than 600 square feet of qualifying roof area conforming to the requirements of Section U101.1.1.
2. Individual units within townhouse buildings that have less than 300 square feet of qualifying roof area per unit conforming to the requirements of Section U101.1.1.
3. Buildings with permanently installed on-site renewable energy systems.

**U101.1.1 General.** Qualifying roof area includes all roof areas other than the following:

1. Roof areas oriented within 45 degrees of true north and having slopes greater than 2:12.
2. Roof areas shaded by existing land forms, structures or trees for more than 70 percent of daylight hours annually. Shading from future tree growth need not be considered.
3. Roof areas consisting of skylights, occupied decks, or planted areas.
4. Access or set-back areas required by this code or the applicable provisions of the International Fire Code.

### SECTION U102 GENERAL DEFINITIONS

**SOLAR-READY ZONE.** A section or sections of the roof or building overhang designated and reserved for the future installation of a solar photovoltaic panels ((or solar water-heating system)).

### SECTION U103 SOLAR-READY ZONE

**U103.1 General.** The solar-ready zone shall comply with Sections U103.1.1 through U103.1.3 ((New detached one- and two-family dwellings, and multiple single-family dwellings (townhouses) with not less than 600 square feet (55.74 m<sup>2</sup>) of roof area oriented between 90 degrees and 270 degrees of true north shall comply with Sections U103.2 through U103.10.

#### **Exceptions:**

1. New residential buildings with a permanently installed on-site renewable energy system.
2. A building where all areas of the roof that would otherwise meet the requirements of Section U103 are in full or partial shade for more than 70 percent of daylight hours annually.))

**U103.2 Construction document requirements for solar ready zone.** Construction documents shall indicate the solar ready zone.))

~~((U103.3))~~ **U103.1.1 Solar-ready zone area.** The ((total)) solar-ready zone may be comprised of one single area or of multiple separated areas. No solar-ready zone shall be less than 5 feet in any dimension nor less than 80 square feet of contiguous area ((area shall be not less than 300 square feet (27.87 m<sup>2</sup>) exclusive of mandatory access or set-back areas as required by this code. New multiple single-family dwellings (townhouses) three stories or less in height above grade plane and with a total floor area less than or equal to 2,000 square feet (185.8 m<sup>2</sup>) per dwelling shall have a solar-ready zone area of not less than 150 square feet (13.94 m<sup>2</sup>). The solar-ready zone shall be composed of areas not less than 5 feet (1.52 m) in width and not less than 80 square feet (7.44 m<sup>2</sup>) exclusive of access or set-back areas as required in this code or the applicable provisions of the International Fire Code. No portion of the solar zone shall be located on a roof slope greater than 2:12 that faces within 45 degrees of true north)).

~~((U103.4))~~ **U103.1.2 Obstructions and shadows.** The ((Solar-ready zones)) solar-ready zone shall be free from obstructions including, but not limited to, vents, chimneys, and roof-mounted equipment. Permanently installed objects adjacent to the solar-ready zone shall be located so that they do not cast shadows on the solar-ready zone when the sun is directly east, west, or south of the solar-

ready zone at 45 degrees above the horizon. Such objects include but are not limited to taller portions of the building, parapets, chimneys, antennas, rooftop equipment, trees, and roof plantings. Shading from future tree growth need not be considered.

**U103.1.3 Structural support.** The supporting structure of the solar-ready zone shall be designed in accordance with Section R324.4, using a minimum of 4 pounds per square foot as an assumed photovoltaic panel weight.

~~((U103.5 Shading. The solar-ready zone shall be set back from any existing or new permanently affixed object on the building or site that is located south, east, or west of the solar zone a distance at least two times the object's height above the nearest point on the roof surface. Such objects include, but are not limited to, taller portions of the building itself, parapets, chimneys, antennas, signage, rooftop equipment, trees and roof plantings.~~

~~**U103.6 Capped roof penetration sleeve.** A capped roof penetration sleeve shall be provided adjacent to a solar-ready zone when the solar-ready zone has a roof slope of 2:12 or less. The capped roof penetration sleeve shall be sized to accommodate the future photovoltaic system conduit, but shall have an inside diameter not less than 1 1/4 inches.~~

~~**U103.7 Roof load documentation.** The structural design loads for roof dead load and roof live load shall be clearly indicated on the construction documents.~~

~~**U103.8 Interconnection pathway.** Construction documents shall indicate pathways for routing of conduit or plumbing from the solar-ready zone to the electrical service panel or service hot water system.))~~

~~((U103.9))~~ **U103.2 Electrical service reserved space.** The main electrical service or feeder panel for each *dwelling unit* shall have a reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." ~~((The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.))~~

~~((U103.10))~~ **U103.3 Posted certificate** ~~((Construction documentation certificate))~~. A permanent certificate, indicating the boundaries and structural provisions of the *solar-ready zone* ~~((and other requirements of this section))~~, shall be posted near the electrical distribution panel, water heater or other conspicuous location ~~((by the builder or registered design professional))~~.

**U103.4 Construction documents.** *Construction documents* shall indicate the boundaries and the assumed photovoltaic panel weight used for design in Section U103.4 for the *solar-ready zone*.